Remarks

By the present amendment, claims 1, 4 and 7-19 have been deleted and claims 2, 3, 5, 6 and 22 have been amended. New claims 23-35 have been added in order to claim the specific Lafora's disease mutations recited in Table 3 of the application as filed. Claims 2, 3, 5, 6 and 20-35 are currently pending in the application. The amendments to the claims have been made without prejudice and without acquiescing to any of the Examiner's objections. Applicants reserve the right to pursue any of the deleted subject matter in a further divisional, continuation, or continuation-in-part application. The amendments do not contain new matter and their entry is respectfully requested.

The Official Action dated December 24, 2002 has been carefully considered. It is believed that the amended claims submitted herewith and the following comments represent a complete response to the Examiner's rejections and place the present application in condition for allowance. Reconsideration is respectfully requested.

Election/Restriction

By the present amendment, Applicants have deleted non-elected claims 7-16 as the restriction requirement has been made final.

Priority

Applicants have amended page 1 of the application in order to reference the prior applications as requested by the Examiner.

The Examiner comments that claims 1-6 and 20-22 do not have support in the provisional applications from which the present application claims priority. The Examiner concludes that the filing date of claims 1-6 and 20-22 is considered to be the international filing date of July 20, 1999. We respectfully disagree with the Examiner as the first filed priority application, U.S. serial no. 60/093,495 filed on July 20, 1998 does have support for claims 1, 4-6 and 20-

22 (partially) with respect to their reference to the sequences provided in Figure 4A, and 7-10 as well as in SEQ ID NOs:3-6. U.S. serial no. 60/093,495 (hereinafter the '495 application) discloses two incomplete sequences of the Lafora's disease gene which is referred to as LD1 in the priority application and renamed as EPM2A in the present application. The two sequences were referred to as transcript A and transcript B in the priority application. The nucleotide and amino acid sequences of transcript A and transcript B were provided in the '495 application in Figures 7-10 and SEQ ID NOs: 1-4. We submit that SEQ ID NOs:3-6 and Figures 7-10 of the present application are the same as SEQ ID NOs:1-4 and Figures 7-10 of the '495 application. Therefore, there is verbatim support for the sequences of SEQ ID NOs:3 and 5 of the present application in the '495 application. There is also support for claim 1 as it is identical to claim 1 as filed in the '495 application. In addition, there is support for claims 20-22 insofar as they refer to SEQ ID NO:3 and SEQ ID NO:5 on page 6 of the '495 application as filed.

In view of the foregoing, we respectfully submit that claims 1, 4-6 and 20-22 (insofar as they refer to SEQ ID NO:3 and SEQ ID NO:5) are entitled to the priority date of July 20, 1998.

Claim Objections

The Examiner has objected to claims 2-6 as they refer to figures. In response, these claims have been amended in order to delete reference to the figures and to only refer to the SEQ ID NOs. The Examiner has also objected to claim 4 as being a duplicate of claim 5. In response, claim 4 has been deleted by the present amendment.

35 USC §112, Second Paragraph

The Examiner has objected to claim 3 under 35 USC §112, second paragraph as being indefinite. In particular, the Examiner has objected to the "preferably" phrase which has been deleted by the present amendment. The Examiner has also objected to part (d) as being indefinite which has been deleted by the present amendment.

The Examiner has also objected to claim 22 as being indefinite in view of the phrase "capable of hybridizing". In response, this phrase has been replaced with "which hybridizes" as suggested by the Examiner.

35 USC §112, First Paragraph

The Examiner has objected to claims 1, 3-6 and 20-22 under 35 USC §112, first paragraph as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. We respectfully disagree with the Examiner for the reasons that follow.

By the present amendment, claim 1 has been deleted and claim 3 has been amended in order to delete parts (c) and (d) which refer to homologous sequences and fragments of the sequence. However, claim 3 does retain sequences that are complementary or sequences that differ due to the degeneracy of the genetic code as these terms were not under objection.

Applicants disagree that claims 20-22 are not supported in the disclosure as there is clear support for such claims on page 5, lines 10-23 of the application as filed.

In view of the foregoing, we respectfully request that the objections to claims 1, 3-6 and 20-22 under 35 USC §112, first paragraph, as lacking written description, be withdrawn.

The Examiner has objected to claims 1, 3-6 and 20-22 under 35 USC §112, first paragraph, because the specification, while being enabling for a nucleic acid encoding a protein tyrosine phosphatase which is associated with Lafora's disease wherein the nucleic acid sequence comprises instant SEQ ID NO:1, or for nucleic acids associated with Lafora's disease wherein the nucleic acids consist of instant SEQ ID NO:3 or instant SEQ ID NO:5, does not reasonably provide enablement for additional nucleic acids that are associated with Lafora's disease.

As mentioned above, Applicants have deleted claim 1 and amended claim 3 in order to remove reference to parts (c) and (d). Therefore, we submit that Applicants are entitled to nucleic acid sequences that are complementary to SEQ ID NO:1 as well as nucleic acid sequences that differ from SEQ ID NO:1 due to the degeneracy of the genetic code as claimed in claim 3. Applicants are also entitled to homologous sequences or sequences that hybridize as claimed in claim 20-22. The claims as currently on file are clearly enabled by the application as one of skilled in the art would readily prepare homologous or hybridizing sequences to the sequences described in the application.

In view of the foregoing, we respectfully request that the objections to the claims under 35 USC §112, first paragraph as lacking enablement, be withdrawn.

35 USC §102

The Examiner has objected to claim 22 under 35 USC §102(b) as being anticipated by Bartnik et al. (EP 0705842). In response, claim 22 has been amended in order to specify that the sequence encodes a protein tyrosine phosphatase which is associated with Lafora's disease. Bartnik et al. does not suggest or disclose sequences associated with Lafora's disease gene and therefore we respectfully request that this objection be withdrawn.

The Examiner has also objected to claims 1, 3, 20, 21 and 22 under 35 USC §102(a) as being anticipated by Serratosa et al. (Human Molecular Genetics, Feb. 1999, Vol. 8, No. 2). The Examiner states that this reference is citable as the claims are not entitled to the priority date of the provisional application.

Serratosa et al. describes a nucleic acid sequence that is associated with Lafora's disease. However, the nucleic acid sequence of Serratosa et al. is identical to the sequence provided in SEQ ID NO:3. As mentioned above, the sequence of SEQ ID NO:3 was provided in the '495 priority application. Therefore, as Applicants have a priority date of July 20, 1998 for SEQ ID NO:3 that precedes the Serratosa et al. publication date of February 1999,

Serratosa et al. is not citable under 35 USC §102(a) against the present application.

The Examiner has also objected to claims 1, 3-6 and 20-22 under 35 USC §102(a) as being anticipated by Minassian et al. (Nature Genetics, Vol. 20, pg. 171-174, October 1998).

As the Examiner has noted, Minassian et al. is a disclosure derived from the inventors. Further, Minassian et al. describes the nucleic acid sequence of transcript A and transcript B which were included in the '495 priority application. Therefore, the priority date of transcript A and B precedes the publication of Minassian et al. Therefore, Minassian et al. is not citable under 35 USC §102(a) against the present application.

In view of the foregoing, we respectfully request that all of the objections to the claims under 35 USC §102 be withdrawn.

The Commissioner is hereby authorized to charge any fee (including any claim fee) which may be required to our Deposit Account No. 19-0741.

In view of the foregoing comments and amendments, we respectfully submit that the application is in order for allowance and early indication of that effect

is respectfully requested. Should the Examiner deem it beneficial to discuss the application in greater detail, she is kindly requested to contact the undersigned at her convenience.

Respectfully submitted,

Date June 24, 2003 By _____

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Marked-Up V rsion of the Claims

Claim 2. (Amended) A nucleic acid [according to claim 1] containing a sequence encoding a protein tyrosine phosphatase which is associated with Lafora's disease having a sequence as shown in SEQ.ID.NO.:1 [or Figure 13].

Claim 3. (Amended) An isolated nucleic acid molecule [according to claim 1] containing a sequence encoding a protein tyrosine phosphatase which is associated with Lafora's disease comprising

(a) a nucleic acid sequence as shown in SEQ.ID.NO.:1 [or Figure 13], wherein T can also be U;

(b) nucleic acid sequences complementary to (a); or

[(c) nucleic acid sequences which are homologous to (a) or (b);

(d) a fragment of (a) to (c) that is at least 15 bases, preferably 20 to 30 bases, and which will hybridize to (a) to (d) under stringent hybridization conditions; or]

[(e)] (c) a nucleic acid molecule differing from any of the nucleic acids of (a) [to (c)] or (b) in codon sequences due to the degeneracy of the genetic code.

Claim 5. (Amended) An isolated nucleic acid molecule [according to claim 1] containing a sequence encoding a protein tyrosine phosphatase which is associated with Lafora's disease having a sequence as shown in [Figure 7] SEQ.ID.NO.:3.

Claim 6. (Amended) An isolated nucleic acid molecule [according to claim 1] containing a sequence encoding a protein tyrosine phosphatase which is associated with Lafora's disease having a sequence as shown in [Figure 9] SEQ.ID.NO.:5.

Claim 22. (Amended) An isolated nucleic acid molecule [capable of hybridizing] which hybridizes to a nucleic acid sequence set forth in SEQ.ID.NO.:1, SEQ.ID.NO.:3, or SEQ.ID.NO.:5, wherein the hybridization

first occurs in a solution of 6 x SSC at about 45°C, followed by a wash in a solution of 2 x SSC at 50°C, wherein said sequence contains a sequence encoding a protein tyrosine phosphatase which is associated with Lafora's disease.